

REMARKS

In the Office Action, the Examiner rejected claims 43-45, 48, 49, 52-57, 88, and 93-96 under 35 U.S.C. § 102(b) as being anticipated by USP 5,973,376 issued to Rostoker et al (Rostoker). The Examiner found claims 4-13 and 58-64 to be allowable, and found claims 46-47, 50, 51, and 89-92 to be allowable if re-written in independent form. In this Preliminary Amendment, Applicants have amended claims 43, 46, 50, 51, 58, 60, 64, and 88. Claims 4-13, 43-64, and 88-96 will be pending after entry of this Preliminary Amendment.

I. Claims 4-13 and 58-64

Applicants respectfully acknowledge the allowance of claims 4-13 and 58-64. In this Amendment, Applicants have amended claims 58, 60, and 64 to correct certain informalities in these claims.

II. Claims 43-57

In this Amendment, Applicants have amended claims 43, 50, and 51 to broaden the scope of this claim. Also, Applicants have amended claims 43, 46, 50, and 51 to correct certain informalities in these claims.

The Examiner rejected claims 43-45, 48, 49, and 52-57 under § 102(b) as being anticipated by Rostoker. Applicants respectfully traverse this rejection. Claim 43 recites a method of placing circuit modules in an integrated circuit ("IC") layout that has a net with several circuit elements. The method constructs a connection graph that connects the circuit elements of the net. This connection graph has several edges, at least one of which is at least partially diagonal. The method then identifies a placement metric based on the connection graph. Claims 44-45, 48, 49, and 52-57 are dependent on claim 43, either directly or indirectly through one or more intervening dependent claims.

Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest the method recited in claim 43. Specifically, Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest a placing method (1) which constructs a connection graph, with at least one edge that is at least partially diagonal, to connect the circuit elements of a net, and (2) which, based on this graph, identifies a placement metric. In other words, Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest a placing method that computes a placement metric based on a connection graph that connects the circuit elements of a net, where the connection graph has at least one edge that is at least partially diagonal.

The Examiner cited the following paragraph on Column 14, lines 15-20 of Rostoker, as the section in Rostoker that discloses "identifying a placement metric based on the connection graph."

Using conventional interconnection such as that shown in FIG. 2, the device capacity of a die may be directly limited by the interconnection. Interconnection is a large factor in die processing costs. Interconnection can be a significant factor in chip yield. Therefore, better interconnection designs can offer significant advantages.

Applicants respectfully submit that the paragraph above does not disclose "identifying a placement metric based on the connection graph." Moreover, Rostoker's discussion on columns 51-56 regarding its Figure 69 (which depicts a placement algorithm) does not disclose, teach, or even suggest a placement algorithm that identifies a placement metric based on a connection graph that connects the circuit elements of a net, where the connection graph has at least one edge that is at least partially diagonal.

As Rostoker does not disclose, teach, or even suggest the method of recited claim 43, it does not disclose, teach, or even suggest the methods of the dependent claims 44-57. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the § 102

rejection of claims 43-45, 48, 49, and 52-57. Applicants respectfully acknowledge the Examiner's finding that claims 46-47, 50, and 51 recite allowable subject matter.

III. Claims 88-96

In this Amendment, Applicants have amended claim 88 to broaden the scope of this claim. The Examiner rejected claims 88 and 93-96 under § 102(b) as being anticipated by Rostoker. Applicants respectfully traverse this rejection. Claim 88 recites a method of placing circuit modules in an integrated circuit ("IC") layout that has a set of circuit elements. The method identifies a connection graph that connects the set of circuit elements, where the connection graph has several edges, and at least two of the edges are neither parallel nor orthogonal to each other. Based on this connection graph, the method then identifies a placement metric. Claims 93-96 are dependent on claim 88, either directly or indirectly through one or more intervening dependent claims.

Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest the method recited in claim 88. Specifically, Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest a placing method (1) which constructs a connection graph, with at least two edges that are neither parallel nor orthogonal to each other, to connect the circuit elements of a net, and (2) which, based on this graph, identifies a placement metric. In other words, Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest a placing method that computes a placement metric based on a connection graph that connects the circuit elements of a net, where the connection graph has at least two edges that are neither parallel nor orthogonal to each other.

The Examiner cited the following paragraph on Column 14, lines 15-20 of Rostoker, as the section in Rostoker that discloses "identifying a placement metric based on the connection graph."

Using conventional interconnection such as that shown in FIG. 2, the device capacity of a die may be directly limited by the interconnection. Interconnection is a large factor in die processing costs. Interconnection can be a significant factor in chip yield. Therefore, better interconnection designs can offer significant advantages.

Applicants respectfully submit that the paragraph above does not disclose "identifying a placement metric based on the connection graph." Moreover, Rostoker's discussion on columns 51-56 regarding its Figure 69 (which depicts a placement algorithm) does not disclose, teach, or even suggest a placement algorithm that identifies a placement metric based on a connection graph that connects the circuit elements of a net, where the connection graph has at least two edges that are neither parallel nor orthogonal to each other.

As Rostoker does not disclose, teach, or even suggest the method of recited claim 88, it does not disclose, teach, or even suggest the methods of the dependent claims 93-96. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the § 102 rejection of claims 88 and 93-96. Applicants respectfully acknowledge the Examiner's finding that claims 89-92 recite allowable subject matter.

IV. Information Disclosure Statement

Accompanying this Preliminary Amendment are two 1449 forms of two Information Disclosure Statements that applicants are submitting concurrently with but separately from this Preliminary Amendment. These Information Disclosure Statements list and provide copies of several related cases and several additional references for the Examiner's consideration.

V. Summary of Telephone Conference

Along with the Office Action, the Examiner provided an Interview Summary of an interview between the Examiner and the Applicants' attorney. Applicants thank the Examiner for providing this Interview Summary. Applicants, however, respectfully would like to clarify that Applicants' attorney identified the edges between 1340, 1345, and 1360 as but one example of

two edges that are neither orthogonal nor parallel. By no means is the limitation that the "edges are neither parallel nor orthogonal to each other" to be construed to only cover this one example of one embodiment covered by these claims.

CONCLUSION

In view of the foregoing, it is submitted that the currently pending claims, namely claims 4-13, 43-64, and 88-96, are in condition for allowance. Reconsideration of the rejections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,


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